

WHAT IS CLAIMED IS:

1. A data communication apparatus, comprising:

- an interface for enabling communication with a remote entity via a network;
- 5 • a control entity in communication with said interface and operative to:
 - establish a packet-switched connection with the remote entity through the network;
 - negotiate with the remote entity using in-band signaling entry into a codec-bypass mode of operation.

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2. The data communication apparatus defined in claim 1, wherein the control entity being operative to negotiate using in-band signaling comprises the control entity being operative to exchange control information over said connection.

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3. The data communication apparatus defined in claim 2, wherein said connection carries call setup information exchanged between the data communication apparatus and the remote entity.

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4. The data communication apparatus defined in claim 3, wherein the control information and the call setup information are exchanged asynchronously to one another.

5. The data communication apparatus defined in claim 3, wherein the control entity is further operative to exchange compressed audio information with the remote entity after successful negotiation of the entry into the codec-bypass mode of operation.

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6. The data communication apparatus defined in claim 5, wherein the control entity is further operative to exchange the compressed audio information over said connection.

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7. The data communication apparatus defined in claim 5, wherein the control entity is further operative to establish a second connection with the remote entity through the network and to exchange the compressed audio information over said second connection.

8. The data communication apparatus defined in claim 7, wherein said control entity is further operative to suspend the exchange of audio information over the first connection.
9. The data communication apparatus defined in claim 7, wherein said control entity is
5 further operative to exchange the compressed audio information over said second connection while continuing the exchange of audio information over the first connection.
10. The data communication apparatus defined in claim 9, wherein the audio information
10 exchanged over the first connection is in an uncompressed format.
11. The data communication apparatus defined in claim 10, further comprising a codec for decompressing compressed audio information destined for the remote entity via the first connection and compressing decompressed audio information received from the remote entity via the first connection.
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12. The data communication apparatus defined in claim 2, wherein said connection carries audio information exchanged between the data communication apparatus and the remote entity.
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13. The data communication apparatus defined in claim 12, wherein the control information and the audio information are exchanged asynchronously to one another.
14. The data communication apparatus defined in claim 12, wherein the control entity is
25 further operative to exchange compressed audio information with the remote entity after successful negotiation of the entry into the codec-bypass mode of operation.
15. The data communication apparatus defined in claim 14, wherein the control entity is further operative to exchange the compressed audio information over said connection.
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16. The data communication apparatus defined in claim 14, wherein the control entity is further operative to establish a second connection with the remote entity through the network and to exchange the compressed audio information over said second connection.

17. The data communication apparatus defined in claim **16**, wherein said control entity is further operative to suspend the exchange of audio information over the first connection.

5 18. The data communication apparatus defined in claim **16**, wherein said control entity is further operative to exchange the compressed audio information over said second connection while continuing the exchange of audio information over the first connection.

10 19. The data communication apparatus defined in claim **18**, wherein the audio information exchanged over the first connection is in an uncompressed format.

15 20. The data communication apparatus defined in claim **19**, further comprising a codec for decompressing compressed audio information destined for the remote entity via the first connection and compressing decompressed audio information received from the remote entity via the first connection.

21. A method for execution in a data communication apparatus , comprising:

20 • establishing a packet-switched connection with a remote entity through a network;

22. A computer-readable storage medium containing a program element for execution by a data communication apparatus to implement a method, said method comprising:

25 • establishing a packet-switched connection with a remote entity through a network;

23. A data communication apparatus, comprising:

30 • means for establishing a packet-switched connection with a remote entity through a network;

 • means for negotiating with the remote entity using in-band signaling entry into a codec-bypass mode of operation.

24. A data communication apparatus, comprising:

- an interface for enabling communication with a remote access network via a core network;
- a control entity in communication with said interface and operative to:
 - establish a packet-switched connection with the remote access network through a core network;
 - use in-band signaling to coordinate with the remote access network a functionality of the connection.

10 25. The data communication apparatus defined in claim 24, wherein the control entity being
adapted to use in-band signaling to coordinate with the remote access network a
functionality of the connection comprises the control entity being adapted to use in-band
signaling to coordinate power control for the connection.

15 26. The data communication apparatus defined in claim 24, wherein the control entity being
adapted to use in-band signaling to coordinate with the remote access network a
functionality of the connection comprises the control entity being adapted to use in-band
signaling to coordinate link adaptation for the connection.

20 27. The data communication apparatus defined in claim 24, wherein the control entity being
adapted to use in-band signaling to coordinate with the remote access network a
functionality of the connection comprises the control entity being adapted to use in-band
signaling to negotiate entry of the data communication apparatus into a codec-bypass
mode of operation.

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28. The data communication apparatus defined in claim 24, wherein the control entity being adapted to use in-band signaling to coordinate with the remote access network a functionality of the connection comprises the control entity being adapted to use in-band signaling to negotiate codec selection at the data communication apparatus and at the remote access network.

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29. The data communication apparatus defined in claim 24, wherein the control entity being adapted to use in-band signaling to coordinate with the remote access network a

functionality of the connection comprises the control entity being adapted to use in-band signaling to negotiate audio quality enhancement of the connection.

30. The data communication apparatus defined in claim 24, wherein the control entity being
5 adapted to use in-band signaling to coordinate with the remote access network a functionality of the connection comprises the control entity being adapted to exchange control information over said connection.

31. The data communication apparatus defined in claim 30, wherein said connection carries
10 call setup information exchanged between the data communication apparatus and the remote access network.

32. The data communication apparatus defined in claim 31, wherein the control information and the call setup information are exchanged asynchronously to one another.

15 33. The data communication apparatus defined in claim 30, wherein said connection carries audio information exchanged between the data communication apparatus and the remote access network.

20 34. The data communication apparatus defined in claim 33, wherein the control information and the audio information are exchanged asynchronously to one another.

35. The data communication apparatus defined in claim 24, the data communication apparatus being an access network controller.

25 36. The data communication apparatus defined in claim 24, wherein the in-band signaling is in compliance with an “Iu” user plane.

30 37. The data communication apparatus defined in claim 24, wherein the in-band signaling is in compliance with an “Nb” user plane.

38. A method for execution in a data communication apparatus , comprising:
• establishing a packet-switched connection with a remote access network through a network;

- using in-band signaling to coordinate with the remote access network a functionality of the connection.

39. A computer-readable storage medium containing a program element for execution by a
5 data communication apparatus to implement a method, said method comprising:

- establishing a packet-switched connection with a remote access network through a network;
- using in-band signaling to coordinate with the remote access network a functionality of the connection.

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40. A data communication apparatus, comprising:

- means for establishing a packet-switched connection with a remote access network through a network;
- means for using in-band signaling to coordinate with the remote access network a functionality of the connection.

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41. A data communication apparatus, comprising:

- an interface for enabling packet-switched communication with a first remote entity and a second remote entity;
- a control entity in communication with said interface and operative to:
 - negotiate with the remote entity using in-band signaling entry into a codec-bypass mode of operation;
 - upon successful negotiation of entry into the codec-bypass mode of operation, forward compressed audio information received from the first entity to the second entity and forward compressed audio information received from the second entity to the first entity.

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42. The data communication apparatus defined in claim 41, the data communication apparatus being a gateway.

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